



# FACT SHEET

NPDES Permit Number:	ID-002014-1
Public Notice Start Date:	April 27, 2001
Public Notice Expiration Date:	May 29, 2001
Technical Contact:	Kelly Huynh 206/553-8414 1-800-424-4372 (within Region 10) huynh.kelly@epa.gov

**The United States Environmental Protection Agency (EPA)  
Plans To Reissue A  
National Pollutant Discharge Elimination System (NPDES) Permit To:**

**The City of Driggs  
80 North Main Street, P.O. Box 48  
Driggs, Idaho 83422**

**the Idaho Department of Environmental Quality Proposes to  
Certify the Permit**

**EPA Proposes NPDES Permit Reissuance.**

EPA proposes to reissue an NPDES permit to the City of Driggs. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to a drainage ditch to Woods Creek and the Teton River. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the current discharge
- a listing of draft effluent limitations and other conditions
- a map and description of the discharge location
- detailed technical material supporting the conditions in the permit

**The State of Idaho Proposes Certification.**

EPA is requesting that the Idaho Department of Environmental Quality certify the NPDES permit for the City of Driggs, under section 401 of the Clean Water Act.

**Public Comment.**

Persons wishing to comment on the draft permit may do so in writing by the expiration date of the public notice. All comments must be in writing and include the commenter's name, address, and telephone number and either be addressed to the Office of Water Director at U.S. EPA, Region 10, 1200 6th Avenue, OW-130, Seattle, WA 98101; submitted by facsimile to (206) 553-0165; or submitted via e-mail to [huynh.kelly@epa.gov](mailto:huynh.kelly@epa.gov).

After the comment period closes, and all significant comments have been considered, EPA's regional Director for the Office of Water will make a final decision regarding permit reissuance. If no comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If comments are received, EPA will address the significant comments and issue the permit. The permit will become effective 30 days after the issuance date, unless an appeal is filed with the Environmental Appeals Board within 30 days.

**Public comment on State certification**

Persons wishing to comment on State Certification should submit written comments by the Public Notice expiration date to the Idaho Department of Environmental Quality (IDEQ), c/o Greg Eager, 900 North Skyline, Suite B, Idaho Falls, Idaho 83402. A copy of the comments should also be submitted to EPA.

**Documents are Available for Review.**

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (See address below).

United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue, OW-130  
Seattle, Washington 98101  
(206) 553-0523 or  
1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The Fact Sheet and draft permit are also available at:

EPA Idaho Operations Office  
1435 North Orchard Street  
Boise, Idaho 83706  
(208) 378-5746

Draft permits, Fact Sheets, and other information can also be found by visiting the Region 10 website at [www.epa.gov/r10earth/water.htm](http://www.epa.gov/r10earth/water.htm).

## TABLE OF CONTENTS

I.	APPLICANT .....	5
II.	FACILITY INFORMATION .....	5
	A. Treatment Plant Description .....	5
	B. Background Information .....	5
III.	RECEIVING WATER .....	6
	A. Outfall Location/Receiving Water .....	6
	B. Water Quality Standards .....	6
	C. Water Quality Limited Segment .....	7
IV.	EFFLUENT LIMITATIONS .....	7
V.	SLUDGE REQUIREMENTS .....	8
VI.	MONITORING REQUIREMENTS .....	9
	A. Effluent Monitoring .....	9
	B. Method Detection Limits (MDLs) .....	9
	C. Upstream and Downstream Ambient Monitoring .....	10
	D. Representative Sampling .....	10
VII.	OTHER PERMIT CONDITIONS .....	11
	A. Quality Assurance Plan .....	11
	B. Additional Permit Provisions .....	11
	C. Operation and Maintenance Plan .....	11
VIII.	OTHER LEGAL REQUIREMENTS .....	12
	A. Endangered Species Act .....	12
	B. Essential Fish Habitat .....	12
	C. State Certification .....	12
	D. Permit Expiration .....	13
	APPENDIX A Wastewater Treatment Plant Location .....	A-1
	APPENDIX B Water Quality Standards .....	B-1
	APPENDIX C Basis for Effluent Limitations .....	C-1
	APPENDIX D Endangered Species Act .....	D-1
	APPENDIX E Effluent Limit Calculation for Total Residual Chlorine .....	E-1

## **I. APPLICANT**

City of Driggs  
NPDES Permit No.: ID-002014-1

80 North Main Street, P.O. Box 48  
Driggs, Idaho 83422

Contact: Alan Wilder, Public Works Director

## **II. FACILITY INFORMATION**

### **A. Treatment Plant Description**

The City of Driggs owns, operates, and has maintenance responsibility for a facility which treats domestic sewage from local residents and commercial establishments. The facility's application indicates that the design flow of the facility is 0.6 million gallons per day (mgd). From 1998 through 2000 the facility's average monthly discharge has been between 0.04 mgd and 0.38 mgd. Domestic wastewater is treated through a four-cell facultative aerated lagoon system. Effluent is chlorinated prior to discharge and is discharged year-round to a drainage ditch, which flows into Woods Creek and then the Teton River about two miles west of the plant. Domestic sludge has accumulated in the bottom of the lagoons and removal has not been required to date.

### **B. Background Information**

The current NPDES permit for the wastewater treatment plant was issued on July 2, 1986 and expired on July 1, 1991. Under federal law, specifically, the Administrative Procedures Act (APA), a federally issued NPDES permit is administratively extended (i.e., continues in force and effect) provided that the permittee submits a timely and complete application for a new permit prior to the expiration of the current permit. Since the City did submit a timely application (Standard Form A) that was received by EPA on November 28, 1990 for a new permit, the current permit was administratively extended. The City of Driggs subsequently filed a General Form 1 and NPDES Form 2A that was received by EPA on June 28, 2000 in response to a request by EPA dated June 6, 2000.

A review of the facility's Discharge Monitoring Reports<sup>1</sup> for the past five years indicates that the facility has periodically failed to be in compliance with its permit effluent limits for five day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), fecal coliform, and total residual chlorine.

---

<sup>1</sup> Discharge monitoring reports are forms that the facility uses to report the results of monitoring the facility has done in compliance with their NPDES permit.

A map has been included in Appendix A which shows the location of the treatment plant and the discharge location.

### III. RECEIVING WATER

#### A. Outfall Location/Receiving Water

The treated effluent from the City of Driggs wastewater treatment facility is discharged from Outfall 001, located at latitude 43° 43' 15" and longitude 111° 07' 35", to an unnamed drainage ditch to Woods Creek and the Teton River at approximately River Mile 56.

Flow information was not available to determine the low flow conditions (1Q10<sup>2</sup> and 7Q10<sup>3</sup>) in the drainage ditch or Woods Creek; however, flow information was available for the Teton River at USGS Gage Station 13052200 (approximately 6.5 miles northwest of Driggs) at River Mile 56.3. The 1Q10 and 7Q10 for the Teton River at this location are 99 cubic feet per second (cfs) and 112 cfs, respectively.

#### B. Water Quality Standards

A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses (such as cold water aquatic life communities, contact recreation, etc.) that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary, by the State, to support the beneficial use classification of each water body. The anti-degradation policy represents a three tiered approach to maintain and protect various levels of water quality and uses.

The Idaho *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02.140.16) protects the Teton River for the following beneficial use classifications: cold water aquatic life communities, salmonid spawning, primary and secondary contact recreation, domestic water supply, and special resource waters. Because Woods Creek is a non-designated waterbody, it must be protected for primary or secondary recreation and cold water aquatic life (IDAPA 58.01.02.101.01). The drainage ditch (i.e. man-made waterway) is protected for the use in which it was developed; agricultural water supply and general surface water quality (IDAPA 58.01.02.101.02).

The criteria that the State of Idaho has deemed necessary to protect the beneficial uses for the drainage ditch, Woods Creek, and the Teton River, and the State's anti-

---

<sup>2</sup> The 1Q10 represents the lowest daily flow that is expected to occur once in ten years.

<sup>3</sup> The 7Q10 represents the lowest 7 day flow that is expected to occur once in ten years.

degradation policy are summarized in Appendix B.

C. Water Quality Limited Segment

A water quality limited segment is any waterbody, or definable portion of water body, where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards. The Teton River, where Woods Creek discharges, has been listed as a water quality limited for sediment.

Section 303(d) of the Clean Water Act requires States to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a waterbody can assimilate without violating a state's water quality standards and allocates that load to known point sources and nonpoint sources. The state has indicated that because the Driggs treatment plant does not discharge sediment, it will not be given any load allocations (i.e. restrictions) in the TMDL.

#### IV. EFFLUENT LIMITATIONS

In general, the Clean Water Act requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits or water quality-based limits. A technology-based effluent limit requires a minimum level of treatment for municipal point sources based on currently available treatment technologies. A water quality-based effluent limit is designed to ensure that the water quality standards of a waterbody are being met. For more information on deriving technology-based effluent limits and water quality-based effluent limits see Appendices C and E. The following summarizes the proposed effluent limitations that are in the draft permit.

1. The pH range shall be between 6.5 - 9.0 standard units.
2. Removal Requirements for BOD<sub>5</sub>: For any month, the monthly average effluent BOD<sub>5</sub> load shall not exceed 35 percent of the monthly average influent BOD<sub>5</sub> load.
3. Surface waters shall be free of floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
4. Surface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses.

Table 1, below, presents the draft effluent limits for BOD<sub>5</sub> and TSS, total residual chlorine, fecal coliform, and E. coli bacteria. In addition to the effluent limit monitoring, effluent monitoring is also being proposed for flow, temperature, total ammonia, and nitrate.

<b>Table 1: City of Driggs Effluent Limitations</b>
---

Parameters	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Instantaneous Maximum Daily Limit
BOD <sub>5</sub>	45 mg/L 225 lbs/day	65 mg/L 325 lbs/day	---	---
TSS	70 mg/L	105 mg/L	---	---
Fecal coliform, organisms/100 mL	---	200	---	---
E. coli bacteria, organisms/100 mL	126	---	---	406
Total Residual Chlorine	12.4 µg/L <sup>1</sup> 0.062 lbs/day	---	17.8 µg/L <sup>1</sup> 0.089 lbs/day	---
Footnote: 1 The effluent limits for total residual chlorine are not quantifiable using EPA approved test methods.				

## V. SLUDGE REQUIREMENTS

The biosolids management regulations at 40 CFR §503 were designed so that the standards are directly enforceable against most users or disposers of biosolids, whether or not they obtain an NPDES permit. Therefore, the publication of Part 503 in the *Federal Register* on February 19, 1993 served as notice to the regulated community of its duty to comply with the requirements of the rule, except those requirements that indicate that the permitting authority shall specify what has to be done.

Requirements are included in Part 503 for pollutants in biosolids, the reduction of pathogens in biosolids, the reduction of the characteristics in biosolids that attract vectors, the quality of the exit gas from a biosolids incinerator stack, the quality of biosolids that are placed in a municipal solid waste landfill unit, the sites where biosolids are either land applied or placed for final disposal, and for a biosolids incinerator.

Even though Part 503 is self-implementing, Section 405(f) of the Clean Water Act requires the inclusion of biosolids use or disposal requirements in any NPDES permit issued to a Treatment Works Treating Domestic Sewage. In addition, the biosolids permitting regulations in 40 CFR §122 and §124 have been revised to expand its authority to issue NPDES permits with these requirements. This includes all biosolids generators, biosolids treaters and blenders, surface disposal sites and biosolids incinerators. In the future, EPA Region 10 will be issuing a separate NPDES general permit which deals only with the use and disposal of biosolids. Facilities that generate biosolids, including the City of Driggs, will be required to be covered under the biosolids general permit. Even though the permittee does not presently have a permit for biosolids use or disposal, the Permittee is responsible for complying with the requirements of 40 CFR 503.

Presently, the permittee accumulates biosolids in the sewage lagoons. The draft permit requires the permittee to comply with 40 CFR Part 503 in the event that any biosolids are removed from the sewage lagoons.

## VI. MONITORING REQUIREMENTS

### A. Effluent Monitoring

Section 308 of the Clean Water Act and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports to EPA. Table 2 presents the proposed effluent monitoring requirements.

<b>Table 2: City of Driggs Monitoring Requirements</b>			
<b>Parameter</b>	<b>Sample Location</b>	<b>Sample Frequency</b>	<b>Sample Type</b>
Flow, mgd	Influent or Effluent	Continuous	Recording
BOD <sub>5</sub> , mg/L	Influent and Effluent	1/month	grab
TSS, mg/L	Effluent	1/month	grab
pH, standard units	Effluent	1/week	grab
Fecal coliform, organisms/100 mL	Effluent	5/week	grab
E. coli Bacteria, organisms/100 mL	Effluent	5/month	grab
Temperature, °C	Effluent	1/week	grab
Nitrate, µg/L	Effluent	1/quarter	grab
Total Ammonia as N, µg/L	Effluent	1/quarter	grab
Total Residual Chlorine, µg/L	Effluent	1/week	grab

### B. Method Detection Limits (MDLs)

EPA's regulations require that permittees monitor for compliance with effluent limits using methods promulgated by EPA at 40 CFR Part 136. The effluent limits for total residual chlorine are below the minimum level (ML) for the most sensitive test method in 40 CFR Part 136.

EPA Region 10 has developed internal guidance for permit writers and compliance officers to address the issues of implementing and enforcing effluent limits that are below the most sensitive MDLs and MLs. This guidance requires that the water quality-based limits be included in the permit, even though compliance with these limits cannot be determined. Instead, the City will be considered to be in compliance with the limits if the concentration of total residual chlorine in the



effluent is below the Minimum Level (ML) of 100 µg/L. The ML is defined as the lowest concentration that gives recognizable signals and an acceptable calibration point. In other words, the ML represents the lowest concentration that can be reliably quantified. EPA believes that the use of the ML as an analytical chemistry performance standard provides an unambiguous and rational means to demonstrate that the best chemistry available at the time of permit issuance is being used.

For all other pollutants, the draft permit requires the City to use an EPA-approved method with an MDL less than the most restrictive effluent limit.

C. Upstream and Downstream Ambient Monitoring

The permittee shall monitor flow upstream of outfall 001 in the drainage ditch monthly. The permittee shall also monitor temperature, pH, and total ammonia in Woods Creek (downstream of where the drainage ditch enters the creek and is mixed) quarterly for the duration of the permit.

D. Representative Sampling

The draft permit has expanded the requirement in the federal regulations regarding monitoring (40 CFR 122.41[j]). This provision now specifically requires representative sampling whenever a bypass, spill, or non-routine discharge of pollutants occurs, if the discharge may reasonably be expected to cause or contribute to a violation of an effluent limit under the permit. This provision is included in the draft permit because routine monitoring could easily miss permit violations and/or water quality standards exceedences that could result from bypasses, spills, or non-routine discharges. This requirement directs the permittee to conduct additional, targeted monitoring to quantify the effects of these occurrences on the final effluent discharge.

## **VII. OTHER PERMIT CONDITIONS**

### **A. Quality Assurance Plan**

The federal regulation at 40 CFR 122.41(e) requires the Permittee to develop and submit a Quality Assurance Plan to ensure that the monitoring data submitted are accurate and to explain data anomalies if they occur. The Permittee is required to submit a Quality Assurance Plan within **60 days** of the effective date of the final permit and implement it within **120 days** of the effective date of this permit. The Quality Assurance Plan shall consist of standard operating procedures the Permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

### **B. Additional Permit Provisions**

Sections II, III, and IV of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because they are regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

### **C. Operation and Maintenance Plan**

Section 402 of the Clean Water Act and federal regulations 40 CFR 122.44(k)(2) and (3) authorize EPA to require best management practices, or BMPs, in NPDES permits. BMPs are measures for controlling the generation of pollutants and their release to waterways. For municipal facilities, these measures are typically included in the facility's Operation & Maintenance (O&M) plan. These measures are important tools for waste minimization and pollution prevention.

The draft permit requires the City of Driggs to incorporate appropriate BMPs into their O&M plan within **180 days** of permit issuance. Specifically, the City must consider spill prevention and control, optimization of chemical use, public education aimed at controlling the introduction of household hazardous materials to the sewer system, and water conservation. To the extent that any of these issues have already been addressed, the City need only reference the appropriate document in its O&M plan. The O&M plan must be revised as new practices are developed.

## VIII. OTHER LEGAL REQUIREMENTS

### A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could adversely affect any threatened or endangered species. EPA has contacted both services regarding threatened and endangered species in the Teton River watershed. NMFS has indicated that there are no listed or threatened species at the location of the Driggs discharge. The USFWS has indicated that none of the endangered species in the area are expected to be impacted by reissuance of the NPDES permit. Therefore, EPA has determined that issuance of this permit will have **no effect** on any of the endangered species that may occur in the vicinity of the discharge. See Appendix D for further details.

### B. Essential Fish Habitat

Section 305(b) of the Magnuson-Stevens Act (16 USC 1855(b)) requires federal agencies to consult with the NMFS when any activity proposed to be permitted, funded, or undertaken by a federal agency may have an adverse effect on designated Essential Fish Habitat (EFH) as defined by the Act. The EFH regulations define an *adverse effect* as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

To date, federal management plans have been approved by the Secretary of Commerce for groundfish and coastal pelagics. None of the 83 West Coast groundfish surveyed for the federal management plan included habitat near Woods Creek and the Teton River (see Section III for a description of the discharge location). Similarly, the coastal pelagic species are not effected by the permitted discharges. Appendix A of Amendment 14 to the Pacific Coast Salmon Plan includes a geographic range freshwater EFH for coho, chinook, and pink salmon (Figure A-1) that does not include Woods Creek or the Teton River. Because the permit does not include discharges to EFH, EPA has made a finding of **no potential for adverse effect**.

### C. State Certification

Section 401 of the Clean Water Act requires EPA to seek state certification before issuing a final permit. As a result of the certification, the state may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards.

### D. Permit Expiration

This permit will expire five years from the effective date of the permit.

**APPENDIX A**  
**Wastewater Treatment Plant Location**

The wastewater treatment plant location map has been provided as a separate file due to its size of the file (100 KB). The file is titled “ID0020141 FS App A.pdf”

## **APPENDIX B**

### **Water Quality Standards**

#### **A. Water Quality Criteria**

The following water quality criteria were considered for the protection of the beneficial uses of Woods Creek and the Teton River:

1. IDAPA 58.01.02.200.02 - Surface waters of the State shall be free from toxic substances in concentrations that impair designated beneficial uses. Furthermore, IDAPA 58.01.02.210.01 incorporates the National Toxics Rule by reference as found in 40 CFR 131.36(b)(1) that includes numeric criteria for toxic substances.
2. IDAPA 58.01.02.200.05 - Surface waters of the State shall be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
3. IDAPA 58.01.02.200.06 - Surface waters of the State shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses.
4. IDAPA 58.01.02.250.01.a. - Hydrogen ion concentration (pH) values within the range of 6.5 to 9.5 standard units.
5. IDAPA 58.01.02.250.01.c.i. - The one-hour average concentration of total residual chlorine shall not exceed 19 ug/L.
6. IDAPA 58.01.02.250.01.c.ii. - The four-day average concentration of total residual chlorine shall not exceed 11 ug/L.
7. IDAPA 58.01.02.250.02.a. - Dissolved oxygen concentrations shall exceed 6 mg/L at all times.
8. IDAPA 58.01.02.250.02.c.i - The one hour average concentration of un-ionized ammonia (as N) is not to exceed  $(0.43/A/B/2)$  mg/L, where:  
  
A = 1 if the water temperature (T) is  $\leq 20^{\circ}\text{C}$ , or  
A =  $10^{(0.03(20-T))}$  if  $T < 20^{\circ}\text{C}$ , and  
  
B = 1 if the pH is  $\leq 8.0$ , or  
B =  $(1 + 10^{(7.4-\text{pH})}) \div 1.25$  if pH is  $< 8.0$
9. IDAPA 58.01.02.250.02.c.ii - The four day average concentration of un-ionized ammonia (as N) is not to exceed  $(0.66/A/B/C)$  mg/L, where:

$A = 1.4$  if  $T$  is  $\geq 15^{\circ}\text{C}$ , or  
 $A = 10^{(0.03(20-T))}$  if  $T < 15^{\circ}\text{C}$ , and

$B = 1$  if the pH is  $\geq 8.0$ , or  
 $B = (1 + 10^{(7.4-\text{pH})}) \div 1.25$  if pH is  $< 8.0$

$C = 13.5$  if pH is  $\geq 7.7$ , or  
 $C = 20(10^{(7.7-\text{pH})}) \div (1 + 10^{(7.4-\text{pH})})$  if the pH is  $< 7.7$

10. IDAPA 58.01.02.250.02.e - Waters designated for salmonid spawning are to exhibit the following characteristics during the spawning period and incubation for the particular species inhabiting those waters:
  - IDAPA 58.01.02.250.02.e.i - Intergravel dissolved oxygen shall have a one day minimum of not less than 5.0 mg/L and a seven day average mean of not less than 6.0 mg/L.
  - IDAPA 58.01.02.250.02.e.ii - Water column dissolved oxygen shall have a one day minimum of not less than 6.0 mg/L or 90% saturation, whichever is greater; and water temperatures of 13 degrees C or less with a maximum daily average no greater than 9 degrees C.
11. IDAPA 58.01.02.251.01 Waters designated for primary contact recreation are not to contain E. coli bacteria significant to the public health in concentrations exceeding:
  - 406/100 mL at any time,
  - a geometric mean of 126/100 mL based on a minimum of five samples taken every 3 to 5 days over a thirty day period.

## **B. Anti-Degradation Policy**

The State of Idaho has adopted an anti-degradation policy as part of their water quality standards. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses. The three tiers of protection are as follows:

**Tier 1 – Maintenance of Existing Uses for all Waters** - The existing in stream uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

**Tier 2 – High Quality Water** – Where the quality of the water exceeds levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Department finds, after full satisfaction on the intergovernmental coordination and public participation provisions of the Department's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the Department shall

assure water quality adequate to protect existing uses fully.

**Tier 3 - Outstanding Resource Waters** – Where high quality waters constitute an outstanding natural resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance, that water shall be maintained and protected from the impacts of point and nonpoint source activities.

The drainage ditch, Woods Creek and the Teton River are Tier 1 waterbodies, therefore the existing stream uses must be protected. An NPDES permit cannot be issued that would result in the water quality criteria being violated. The draft permit contains effluent limits which ensures that the existing beneficial uses for these receiving waters.



## APPENDIX C

### Basis for Effluent Limitations

The Clean Water Act (CWA or the Act) requires Publicly Owned Treatment Works to meet performance-based requirements (also known as technology-based effluent limits) based on available wastewater treatment technology. EPA may find, by analyzing the effect of an effluent discharge on the receiving water, that technology-based effluent limits are not sufficiently stringent to meet water quality standards. In such cases, EPA is required to develop more stringent, water quality-based effluent limits designed to ensure that water quality standards are met. The draft effluent limits reflect whichever limits (technology-based or water quality-based) are more stringent. The following explains in more detail the derivation of technology-based effluent limits and water quality-based effluent limits.

#### A. Technology-Based Effluent Limitations

On September 20, 1984, EPA revised the Secondary Treatment Regulations (40 CFR 133.102) for facilities that use trickling filters or waste stabilization ponds as the principal process. These revisions established effluent limitations for Treatment Equivalent to Secondary Treatment (40 CFR 133.105). Furthermore, the State of Idaho has adjusted the suspended solids effluent limitations for waste stabilization ponds in accordance with 40 CFR 133.103(c) (IDAPA58.01.01.420.02.b.ii) for those that cannot consistently meet the 30-day average concentration of 45 mg/L. The 95<sup>th</sup> percentile of TSS data from January 1995 through October 1999 of 90 mg/L demonstrates that the 45 mg/L monthly limit cannot be consistently achieved. Therefore, the resulting minimum discharge requirements for the City of Driggs is summarized in the table below:

<u>Parameter</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Percent Removal</u>
Biochemical Oxygen Demand (5-day) mg/L	45	65	65
Suspended Solids mg/L	70	105*	

\*Although not specified in IDAPA58.01.02.420.02.b.ii, a weekly average effluent limitation for suspended solids has been established in accordance with 40 CFR 122.45(d)(2) which states that average weekly and average monthly discharge limitation be established for publically owned treatment works. The weekly average limit has been continued from the existing permit.

EPA methodology and Federal regulations at (40 CFR § 122.45 (b) and 122.45 (f)) require BOD<sub>5</sub> and TSS limitations to be expressed as mass based limits using the design flow (0.6 mgd) of the facility. The loading is calculated as follows: concentration × design flow × 8.34. Using this formula, the plant's BOD<sub>5</sub> and TSS discharge permit limits are:

BOD <sub>5</sub> loading, monthly average	= 45 mg/L × 0.6 mgd × 8.34 =	225 lbs/day
BOD <sub>5</sub> loading, weekly average	= 65 mg/L × 0.6 mgd × 8.34 =	325 lbs/day

TSS loading, monthly average      =  $70 \text{ mg/L} \times 0.6 \text{ mgd} \times 8.34 = 350 \text{ lbs/day}$   
TSS loading, weekly average        =  $105 \text{ mg/L} \times 0.6 \text{ mgd} \times 8.34 = 525 \text{ lbs/day}$

The federal regulations at 40 CFR 133.105(c) require that the effluent values for pH be between 6.0 and 9.0 s.u. for facilities discharging effluent equivalent to secondary (i.e. waste stabilization lagoons).

The technology-based chlorine effluent limitation of 0.5 mg/L is derived from standard operating practices. The Water Pollution Control Federation's Chlorination of Wastewater (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time. A treatment plant that provides adequate chlorination contact time can meet the 0.5 mg/L limit on a monthly average basis. Additionally, NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) as well as average monthly limits (AMLs) unless impracticable. The AWL is expressed as 1.5 times the AML, or in this case 0.75 mg/L. Finally, since federal regulations require limitations to be expressed as mass-based limits using the design flow of the facility.

Idaho's water quality standards found at IDAPA 16.01.02.420.05 include the technology-based limit that fecal coliform concentrations in secondary treated effluent not exceed a geometric mean of two hundred per one hundred ml based on no more than one week's data and a minimum of five samples.

## **B. Water Quality-Based Evaluation**

### **1. Statutory Basis for Water Quality-Based Limits**

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to state waters must also comply with limitations imposed by the state as part of its certification of NPDES permits under section 401 of the CWA.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing section 301 (b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality."

The regulations require that this evaluation be made using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

### **2. Reasonable Potential Determination**

The effluent is evaluated to determine if water quality-based effluent limits are needed based on chemical specific numeric criteria. Sometimes it is appropriate to allow a small area of ambient water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loading of the pollutant to the water body, and decrease treatment requirements. Mixing zones can be used only when there is adequate ambient flow volume and the ambient water is below the criteria necessary to protect designated uses. The projected concentrations are determined by either:

- (a) multiplying the maximum actual effluent concentration by a reasonable potential factor (to account for effluent variability) if a mixing zone is not available or
- (b) projecting the receiving water concentration (downstream of where the effluent enters the receiving water) if a mixing zone is available. The maximum actual effluent concentration (multiplied by a reasonable potential factor), ambient water concentration and, the dilution available from the ambient water are used to project the receiving water concentration.

If the projected concentration exceeds the numeric criterion for a specific chemical, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

### 3. Procedure for Deriving Water Quality-Based Effluent Limits

The first step in developing a water quality based permit limit is to develop a wasteload allocation (WLA) for the pollutant. A WLA is the concentration (or loading) of a pollutant that the Permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water. Wasteload allocations are determined in one of the following ways:

#### (a) TMDL-Based Wasteload Allocation

Where the receiving water quality does not meet water quality standards, the WLA is generally based on a TMDL developed by the State. A TMDL is a determination of the amount of a pollutant from point, non-point, and natural background sources, including a margin of safety, that may be discharged to a water body without causing the water body to exceed the criterion for that pollutant. Any loading above this capacity risks violating water quality standards.

Section 303(d) of the CWA requires states to develop TMDLs for water bodies that will not meet water quality standards after the imposition of technology-based effluent limitations to ensure that these waters will come into compliance with water quality standards. The first step in establishing a TMDL is to determine the assimilative capacity (the loading of pollutant that a water body can assimilate without exceeding water quality standards). The next step is to divide the assimilative capacity into

allocations for non-point sources (load allocations), point sources (WLAs), natural background loadings, and a margin of safety to account for any uncertainties. Permit limitations are then developed for point sources that are consistent with the wasteload allocation for the point source. The state has indicated that Driggs will not be included in the TMDL for sediment.

(b) Mixing zone-based WLA

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone, and the background concentrations of the pollutant. Ambient flow data is unavailable for the drainage ditch or Woods Creek and therefore a mixing zone can not be established.

(c) Criterion as the Wasteload Allocation:

In some cases a mixing zone cannot be authorized, either because the receiving water already exceeds the criteria, the receiving water flow is too low to provide dilution, or there is no receiving water flow data. In such cases, the criterion becomes the WLA. Establishing the criterion as the WLA ensures that the Permittee will not contribute to an exceedance of the criteria.

Once the WLA has been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD) to obtain monthly average, and weekly average or daily maximum permit limits. This approach takes into account effluent variability, sampling frequency, and water quality standards. The effluent limits for total residual chlorine were developed in this manner.

## **C. Basis for Effluent Limits**

### **1. Toxic Substances**

The Idaho water quality standards require surface waters of the state to be free from toxic substances in concentration that impair designated uses. The City of Driggs' discharge is not expected to contain toxic substances because it does not receive industrial process wastewater for treatment. The Permittee was not required to submit expanded effluent testing data or toxicity testing data because the facilities design flow is less than 1.0 mgd.

### **2. Narrative Criteria**

The Idaho water quality standards require surface waters of the state to be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses. In addition, the water quality standards require that surface waters be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. The draft permit has incorporated these narrative criteria.

### **3. E. coli and Fecal Coliform Bacteria**

The bacteria *E. coli* (*Escherichia coli*) is commonly found in publically owned treatment works (POTW) effluent. Therefore, consistent with state water quality standards for the protection of primary contact (i.e. swimming), an *E. coli* effluent limit has been added to the permit. The Idaho water quality standard for wastewater discharges (IDAPA 58.01.02.420.5) include the technology-based requirement that fecal coliform concentrations not exceed a geometric mean of 200/100 ml based on a minimum of five samples in one week.

### **4. Total Residual Chlorine**

The previous permit for this facility (May, 1986) determined that water quality-based effluent limits were required for chlorine. A reasonable potential analysis was conducted on the monitoring data and water quality-based effluent limits were determined to be needed. See Appendix E for the permit limit calculations.

5. **pH**

The Idaho state water quality standards require surface waters of the state to have a pH value within the range of 6.5 - 9.5 standard units. The technology-based regulations require that the effluent be between 6.0 and 9.0 s.u. Therefore, a minimum pH value of 6.5 s.u. and a maximum pH value of 9.0 s.u. have been included in the permit.

6. **Biochemical Oxygen Demand and Total Suspended Solids**

The BOD<sub>5</sub> and TSS effluent limits and removal requirements were included in the draft permit consistent with the technology-based requirements for facilities treating equivalent to secondary wastewater. Water quality criteria are not available for these parameters. Discharge from the City of Driggs is not expected to have an appreciable effect on the dissolved oxygen concentration in Woods Creek or the Teton River because of the BOD limitations in the draft permit.

7. **Ammonia**

IDEQ has developed water quality criteria to protect aquatic life against short term and long term adverse impacts from ammonia using the equations found in IDAPA 58.01.02.250.02.c.i (1-hour average) and IDAPA 58.01.02.250.02.c.ii (4-day average).

Since effluent ammonia data is not available, a reasonable potential analysis for ammonia could not be completed. The draft permit includes requirements for effluent and ambient monitoring of total ammonia as N temperature, and pH in the drainage ditch.

## **APPENDIX D**

### **Endangered Species Act**

Section 7 of the Endangered Species Act (ESA) requires federal agencies to request a consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) regarding potential effects an action may have on listed endangered species.

On August 18, 2000, NMFS sent an e-mail to EPA Region 10 indicating that there are no listed or threatened species at the location of Driggs' discharge. In a letter dated September 1, 2000, the USFWS identified the Canada lynx, gray wolf, grizzly bear, bald eagle, whooping crane, and Ute ladies' - tresses (a plant found in wet meadows and river meanders) as being federally-listed endangered species occurring in Teton County, Idaho (the location of the Driggs discharge). This list has not changed according to the updated species list (1-4-01-SP-362) dated March 1, 2001.

EPA has determined that the requirements contained in the draft permit will not have an impact on the Canada lynx, gray wolf, grizzly bear, bald eagle, whooping crane, or Ute ladies' - tresses. Hunting and habitat destruction are the primary causes of declines of the Canada lynx, the gray wolf and the grizzly bear. Issuance of the draft NPDES permit to the City of Driggs will not result in habitat destruction, nor will it result in changes in population that could result in increased habitat destruction. Furthermore, issuance of this draft permit will not impact the food sources of the Canada lynx, the gray wolf, or the grizzly bear.

The primary reasons for the decline of the bald eagle are destruction of their habitat and food sources and widespread historic application of DDT. This permit will not impact any of these issues.

The whooping crane and gray wolf are included on the list as an experimental and non-essential population in the area. Habitat management plans are not developed for these populations.

Modification of riparian and wetland habitats associated with livestock grazing, vegetation removal, excavation, construction, stream channelization, and actions that alter hydrology are the primary causes for adverse impacts to Ute ladies' - tresses. Issuance of an NPDES permit for the City of Driggs wastewater treatment plant will not result in habitat destruction. Data is unavailable regarding whether or not the Ute ladies' - tresses are found in the vicinity of the discharge.

Informal consultation on September 21, 2000 and September 29, 2000 with the USFWS indicated that reissuance of the permits would not affect the Canada lynx, gray wolf, grizzly bear, whooping crane, bald eagle, or Ute ladies' - tresses. Therefore, EPA has determined that issuance of this permit will **not affect** any of the endangered species that may occur in the vicinity of the discharge.

## **APPENDIX E**

### **Effluent Limit Calculation for Total Residual Chlorine**

This appendix describes how the water quality-based effluent limits were calculated for total residual chlorine. The calculations were performed according to procedures outlined in Chapter 5 of the TSD.

EPA was unable to use a mixing zone in the drainage ditch or Woods Creek because ambient flow data was unavailable. Therefore, the reasonable potential calculations and resulting effluent limits were calculated end-of-pipe.

#### **Step 1 - Determine the appropriate water quality criteria**

The water quality criteria is determined based on the use of the receiving water and downstream receiving water. Woods Creek is an nondesignated waterbody, and therefore must be protected for primary or secondary recreation and cold water aquatic life. The acute criteria for total residual chlorine is **19 µg/L** and chronic criteria is **11 µg/L** for the protection of aquatic life.

#### **Step 2 - Determine whether there is “reasonable potential” to exceed the criteria**

There is RP to exceed water quality criteria if the maximum projected concentration of the pollutant exceeds the criterion.

Where, the maximum projected effluent concentration is the maximum reported effluent concentration (3.1 mg/L) multiplied by a reasonable potential multiplier (1.3)

In calculating the reasonable potential multiplier, EPA assumed a sampling frequency of four per month, and used a coefficient of variation of 0.6 based on monthly data reported between 1995 through 2000

4.03 mg/L > acute criteria of 0.019 mg/L

4.03 mg/l > chronic criteria of 0.011 mg/L

Because the maximum projected effluent concentration is greater than the criterion, a total residual chlorine limit must be included in the permit.

#### **Step 3 - Calculate Wasteload Allocations**

Acute and chronic waste load allocations ( $WLA_{acute}$  or  $WLA_{chronic}$ ) are the criterion when a mixing zone is not available. The WLAs define the appropriate concentration of pollutant allowed in the effluent.



#### Step 4 - Develop Permit Limits

##### a) Convert the WLAs to Long Term Averages (LTAs)

The acute and chronic WLAs are converted to acute and chronic LTA concentrations ( $LTA_{acute}$  and  $LTA_{chronic}$ ) using the following equations from Section 5.4 of EPA's TSD:

$$LTA_{acute} = WLA_{acute} \times e^{[0.5F^2 - zF]} \text{ where,}$$

CV = coefficient of variation of the effluent concentration, standard deviation/mean = 0.6

$$F^2 = \ln(CV^2 + 1) = 0.307$$

z = 2.326 for 99<sup>th</sup> percentile probability basis

$$LTA_{acute} = 6.35 \text{ ug/L}$$

$$LTA_{chronic} = WLA_{chronic} \times e^{[0.5F^2 - zF]} \text{ where,}$$

CV = coefficient of variation of the effluent concentration = 0.6

$$F^2 = \ln(CV^2/4 + 1) = 0.086$$

z = 2.326 for 99<sup>th</sup> percentile probability basis

$$LTA_{chronic} = 5.96 \text{ ug/L}$$

##### b) Calculate Average Monthly and Maximum Daily Permit Limits

To protect a water body from both acute and chronic effects, the more limiting of the criterion is used to derive the effluent limitations. The TSD recommends using the 95<sup>th</sup> percentile for the Average Monthly Limit (AML) and the 99<sup>th</sup> percentile for the Maximum Daily Limit (MDL).

To derive the MDL and the AML for chlorine the calculations would be as follows:

$$MDL = LTA_{chronic} \times e^{(zF - 0.5F^2)} \text{ where,}$$

CV = coefficient of variation = 0.6

$$F^2 = \ln(CV^2 + 1) = 0.307$$

z = 2.326 for 99<sup>th</sup> percentile probability basis

$$MDL = 17.8 \text{ ug/L}$$

$$AML = LTA_{chronic} \times e^{(zF - 0.5F^2)} \text{ where,}$$

CV = coefficient of variation = 0.6

$$F^2 = \ln(CV^2/n + 1) = 0.086$$

z = 1.645 for 95<sup>th</sup> percentile probability basis

n = number of sampling events required per month = 4

$$AML = 12.4 \text{ ug/L}$$

Mass based concentration limits were calculated by multiplying the concentration limit by the design flow (0.6 mgd) and the 8.34 conversion factor.

$$\text{MDL} = (0.6 \text{ mgd}) \times (8.34) \times (0.0178 \text{ mg/L}) = \mathbf{0.089 \text{ lbs/day}}$$

$$\text{AML} = (0.6 \text{ mgd}) \times (8.34) \times (0.0124 \text{ mg/L}) = \mathbf{0.062 \text{ lbs/day}}$$